CLAIMS

Therefore, having thus described the invention, at least the following is claimed:

1   1.   A method for providing automated diagnostic services for a cluster

2   computer system comprising a plurality of nodes, each of the plurality of nodes

3   providing an application to a plurality of clients, the method comprising the steps of:

4   receiving information related to a plurality of drives associated with the

5   plurality of nodes in the cluster computer system, the drives defining one or more

6   logical volume groups;

7   determining whether the drives conform to a predefined condition related to

8   failover capability based on the information related to the drives, such that the one or

9   more logical volume groups transition in the event of a failover; and

10   providing a warning if the drives do not conform to the predefined condition.

1   2.   The method of claim 1, wherein the step of receiving information

2   related to a plurality of drives and the step of providing a warning are via a

3   communications network.

1   3.   The method of claim 1, wherein the step of receiving information

2   related to a plurality of drives and the step of providing a warning are performed

3   within the cluster computer system.

1   4.   The method of claim 1, wherein the step of determining whether the

2   drives conform to a predefined condition comprises determining whether the drives

3   are unique.

1   5.   The method of claim 1, wherein the step of determining whether the

2   drives conform to a predefined condition comprises determining whether a plurality of

3   drive paths are valid.

1   6.   The method of claim 1, wherein the step of determining whether the

2   drives conform to a predefined condition comprises determining whether the one or

3   more logical volume groups conform to a predetermined logical volume management

4   condition.

1   7.   The method of claim 6, wherein the step of determining whether the

2   one or more logical volume groups conform to a predetermined logical volume

3   management condition comprises determining whether the logical volume numbers

4   within the one or more logical volume groups are numbered sequentially.

1   8.   The method of claim 1, further comprising the steps:

2   determining which of the plurality of drives are shared drives;

3   initiating a read/write test on the shared drives.

1   9.   The method of claim 8, wherein the step of initiating a read/write test

2   involves a nondestructively bounded pseudo random read/write test.

1   10.   The method of claim 8, further comprising the step of providing a

2   warning if one of the shared drives fails the read/write test.

1   11.   The method of claim 10, further comprising the step of determining

2   whether each of the plurality of nodes in the cluster computer system can access the

3   shared drives.

1   12.   The method of claim 11, further comprising the step of providing a

2   warning if one of the plurality of nodes in the cluster computer system cannot access

3   one of the shared drives.

1   13.   A computer program for providing automated diagnostic services for a

2   cluster computer system comprising a plurality of nodes, each of the plurality of nodes

3   providing an application to a plurality of clients, the computer program comprising:

4   a first portion of logic configured to receive information related to a plurality

5   of drives associated with the plurality of nodes in the cluster computer system, the

6   drives defining one or more logical volume groups;

7   a second portion of logic configured to determine, based on the information

8   related to the drives, whether the drives conform to a predefined condition related to

9   failover capability such that the one or more logical volume groups transition in the

10   event of a failover; and

11   a third portion of logic configured to provide a warning if the drives do not

12   conform to the predefined condition.

1   14.   The computer program of claim 13, wherein the first portion of logic is

2   further configured receive the information related to a plurality of drives via a

3   communications network and the third portion of logic is further configured to

4   provide the warning via the communications network.

1   15.   The computer program of claim 13, wherein the first, second, and third

2   portions of logic are embodied in cluster middleware controlling the cluster computer

3   system.

1   16.   The computer program of claim 13, wherein the first, second, and third

2   portions of logic are embodied in an operating system associated with each of the

3   plurality of nodes.

1   17.   The computer program of claim 13, wherein the second portion of

2   logic is further configured determine whether the drives are unique.

1   18.   The computer program of claim 13, wherein the second portion of

2   logic is further configured to determine whether a plurality of drive paths are valid.

1   19.   The computer program of claim 13, wherein the second portion of

2   logic is further configured to determine whether the one or more logical volume

3   groups conform to a predetermined logical volume management condition.

1   20.   The computer program of claim 19, wherein the second portion of

2   logic is further configured to determine whether the logical volume numbers within

3   the one or more logical volume groups are numbered sequentially.

1   21.   The computer program of claim 13, further comprising:

2   a fourth portion of logic configured to determine which of the plurality

3   of drives are shared drives;

4   a fifth portion of logic configured to initiate a read/write test on the

5   shared drives.

1   22. The computer program of claim 21, wherein the read/write test is a

2 nondestructively bounded pseudo random read/write test.

1   23. The computer program of claim 21, further comprising a sixth portion

2 of logic configured to provide a warning if one of the shared drives fails the read/write

3 test.

1   24. The computer program of claim 23, further comprising a seventh

2 portion of logic configured to determine whether each of the plurality of nodes in the

3 cluster computer system can access the shared drives.

1   25. The computer program of claim 24, further comprising an eighth

2 portion of logic configured to provide a warning if one of the plurality of nodes in the

3 cluster computer system cannot access one of the shared drives.

1   26.   A system for providing automated diagnostic services for a cluster

2   computer system comprising a plurality of nodes, each of the plurality of nodes

3   providing an application to a plurality of clients, the system comprising:

4   means for receiving information related to a plurality of drives associated with

5   the plurality of nodes in the cluster computer system, the drives defining one or more

6   logical volume groups;

7   means for determining, based on the information related to the drives, whether

8   the drives conform to a predefined condition related to failover capability such that the

9   one or more logical volume groups transition in the event of a failover; and

10   means for providing a warning if the drives do not conform to the predefined

11   condition.

1   27.   The system of claim 26, further comprising:

2   means for determining which of the plurality of drives are shared

3   drives;

4   means for initiating a read/write test on the shared drives.

1   28.   The system of claim 27, wherein the read/write test involves a

2   nondestructively bounded pseudo random read/write test.

1   29.   The system of claim 27, further comprising a means for providing a

2   warning if one of the shared drives fails the read/write test.

1   30.   The system of claim 29, further comprising a means for determining

2   whether each of the plurality of nodes in the cluster computer system can access the

3   shared drives.

1   31.   The system of claim 30, further comprising a means for providing a

2   warning if one of the plurality of nodes in the cluster computer system cannot access

3   one of the shared drives.

1   .   32.   A system for providing automated diagnostic services for a cluster .

2   computer system, the system comprising a computer having logic configured to:

3   receive information related to a plurality of drives associated with a plurality

4   of nodes in the cluster computer system, the drives defining one or more logical

5   volume groups;

6   determine, based on the information related to the drives, whether the drives

7   conform to a predefined condition related to failover capability such that the one or

8   more logical volume groups transition in the event of a failover; and

9   provide a warning if the drives do not conform to the predefined condition.

1   33.   The system of claim 32, wherein the computers is a server.

1   34.   The system of claim 32, wherein the logic is embodied in an operating

2   system associated with the computer.

1   35.   The system of claim 32, wherein the logic is embodied in cluster

2   middleware associated with the computer.

1   36.   The system of claim 32, wherein the computer further comprises a

2   network interface card configured to communicate with a cluster interface.

1   37.   The system of claim 36, further comprising one or more clients in

2   communication with the one or more computers via the cluster interface.

1   38.   The system of claim 32, wherein the computer further comprises a

2   network interface configured to communicate with the cluster computer system via a

3   communications network and wherein the information related to a plurality of drives

4   is received via the communications network and the warning is provided to the cluster

5   computer system via the communications network.

1   39.   The system of claim 32, wherein the logic is further configured to

2   determine whether a plurality of drive paths are valid.

1   40.   The system of claim 32, wherein the logic is further configured to

2   determine whether the one or more logical volume groups conform to a predetermined

3   logical volume management condition.

1   41.   The system of claim 32, wherein the logic is further configured to

2 determine whether the logical volume numbers within the one or more logical volume

3 groups are numbered sequentially.

1   42.   The system of claim 32, wherein the logic is further configured to:

2   determine which of the plurality of drives are shared drives; and

3   initiate a read/write test on the shared drives.

1   43.   The system of claim 42, wherein the logic is configured to provide a

2 warning if one of the shared drives fails the read/write test.

1   44.   The system of claim 43, wherein the logic is further configured to

2 determine whether each of the plurality of nodes in the cluster computer system can

3 access the shared drives.

1   45.   The system of claim 44, wherein the logic is further configured to

2 provide a warning if one of the plurality of nodes in the cluster computer system

3 cannot access one of the shared drives.